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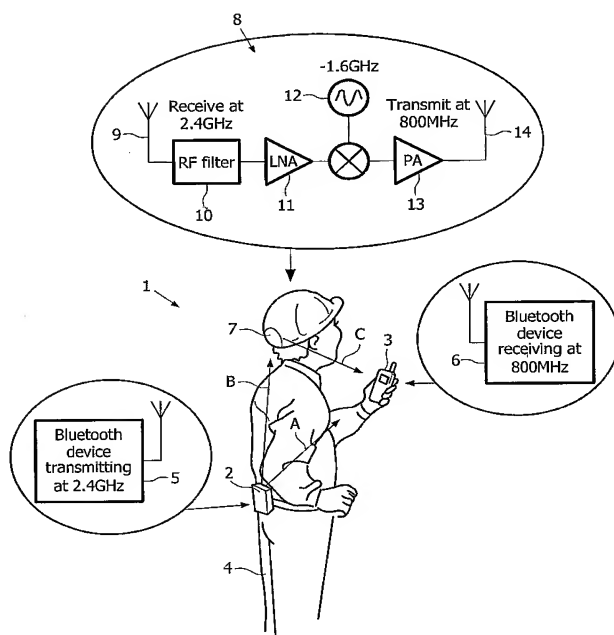
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[Continued on next page]

(54) Title: RADIO REPEATER



(57) Abstract: A radio repeater (8) operates in a radio communication system (1) (such as a Bluetooth® communication system) including a mobile telephone (2) and a personal digital assistant (PDA) (3) each having a (Bluetooth®) transceiver (5,6). The repeater (8) is housed in a headset (7) incorporating an earpiece and microphone (not shown) for voice communication. The repeater (8) comprises a receive antenna (9) for receiving signals, e.g. in a band around 2.4 GHz; means (12) for shifting the frequency of the received signals by a constant frequency interval, e.g. to a band around 800 MHz; and a transmit antenna (14) for transmitting the frequency shifted signals. So, the mobile telephone (2) and the PDA (3) can communicate with each other directly using their Bluetooth® transceivers (5,6), but, if there is no signal propagation path between them, such as when the body of a user (4) comes between them, they can receive the signals transmitted by the repeater (8). As these signals have just been shifted in frequency, the transceivers (5,6), only need knowledge of the way in which the required signal was originally transmitted (e.g. its frequency hopping sequence) and the frequency shift to successfully receive the required signal via the repeater (8).



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